

25 FUNSTON ROAD KANSAS CITY, KANSAS 66115

DATE:

June 6, 1986

MEMORANDUM

SUBJECT: Vulcan Chemical Co, Wichita, Kansas

FROM:

Charles P. Hensley Alt

Chief. EP&R/ENSY

T0:

Robert L. Morby Chief, SPFD/WSTM

Attached for your review is:

- Data Transmittal
- X Work Plan
- Trip Report
- Preliminary Assessment
- HRS Form with Supporting Documentation
- Final Report of Site Investigation

If you have any questions or comments, please contact Paul Doherty at 236-3888.

Attachments

cc: X E&E

X LABO

EP&R, Gary Kepko

TOPE

X RCRA, Karen Flournoy

SPFD

EMCM, Dale Bates

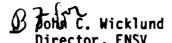
X READ, Bill Rice





JUN 17 1986

E&EK.C.K.





REGION 7 25 FUNSTON ROAD KANSAS CITY, KANSAS 66115

June 4, 1986

MEMORANDUM

SUBJECT: Work Plan for Vulcan Materials Company, Wichita, Kansas

FROM:

Gary Kepko 900

SINV/EP&R/ENSV

TO:

Charles P. Hensley Chief. EP&R/ENSV

I. INTRODUCTION

A. Location

The Vulcan Materials Company is located approximately 10 miles from central Wichita, Kansas, with a legal location of SW/4, Sec 27, T 28S, R lW, Bayneville Quandrangle. The plant is situated in a rural setting about 1.3 miles from Cowskin Creek.

B. Facility Description

In 1950, the Frontier Chemical Company built a 40-ton per day caustic-chlorine plant in the Wichita area. Production was expanded to 60 tons per day in 1953. The plant has since been expanded to a capacity in excess of 500 tons per day. Also in 1953, a benzene hexachloride (BHC) plant was acquired in Wichita. This plant has been closed down. In 1954, Frontier merged with an aggregate company and became a division of Union Chemical and Materials Corporation. Construction began in 1955 on a chloromethanes plant which was used to produce methylene chloride and carbon tetrachloride. In 1957, the division was sold to Vulcan Materials Company and, also in the same year, a new plant was constructed for the production of pentachlorophenol. A perchloroethylene plant was brought on stream in 1958.

Presently, this facility manufactures chlorine, alkali products, chlorosolvents and pentachlorophenol. The raw materials used are salt water, methane and ethane. The chlorine is separated from the brine in a chloralkali diaphragm-type electrolyte cell. Sodium hydroxide is also produced in the electrolytic cells. Halogenated hydrocarbons are produced by direct chlorination of methane.

Process wastes are basically of two types, process wastes and process sludges. The process waters are collected and disposeded of by deep well injection. Process sludges are drummed, manifested and shipped to the



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T0:

Charles P. Hensley Chief, EP&R/ENSV

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Presently, this facility manufactures chlorine, alkali products, chlorosolvents and pentachlorophenol. The raw materials used are salt water, methane and ethane. The chlorine is separated from the brine in a chloralkali diaphragm-type electrolyte cell. Sodium hydroxide is also produced in the electrolytic cells. Halogenated hydrocarbons are produced by direct chlorination of methane.

Process wastes are basically of two types, process wastes and process sludges. The process waters are collected and disposeded of by deep well injection. Process sludges are drummed, manifested and shipped to the

NIES site near Furley, Kansas. Some sludges are incinerated in the hexane incinerator. At one time, a portion of process waste was sent to Chemical Waste Management in Emelle, Alabama.

C. Present Waste Handling Practice

The company handles process wastes on site in the following manner:

- 1. Underground Injection Control Injection of liquid process waste, primarily brine, to the Arbuckle Formation is used for disposal of approximately 1.5 million gallons per day.
- 2. Hex Incinerator Waste from the perchloroethylene plant goes to a John Zinc Company waste heat boiler with two second-dwell at 1800°F.
- 3. Surface Impoundments Alpha cake (alpha-isomer HCB) and hex (Hexachlorinated) wastes were stored on site with a clay cover capping them. Plant wastewater and runoff are held in two holding lagoons with zero discharge.

The compounds used during manufacture are as follows: carbon tetrachloride, chlorine, chloroform, ethylene dichloride, hydrogen chloride (anhydrous), hydrogen chloride (aqueous), methylene chloride, phenol, tetrachloroethylene, 1,1,1-trichloroethane and trichloroethylene. Some of the wastes generated include levels of PCBs at approximately 300 parts per million (ppm).

II. BACKGROUND

A. Past Investigations

1. KDHE Investigations

In 1976, KDHE conducted an extensive investigation of this plant as a result of an NPDES violation. Residents of adjacent farmland complained of damage to their property caused by contaminated runoff from breached lagoons. Air pollution was also documented. A \$10,000 fine was levied against the company for a reported fish kill. In August 1976, KDHE issued an order to the company for cleanup of the site. In 1982, KDHE sampled private wells within a one- to two-mile radius of the plant to determine water quality. KDHE notified property owners of contaminated wells and provided either an alternate water supply or carbon filters. KDHE worked very closely with the company to mitigate the problems. In September 1985, KDHE collected a number of air samples from around the Vulcan facility.

2. EPA Investigations

In May 1979, EPA conducted an on-site inspection of the Vulcan Materials Company, Wichita facility. No samples were collected. The EPA inspection showed Vulcan to be in full compliance with the KDHE order.

III. PROPOSED STUDY PLAN

A. Objective

The objectives of the proposed sampling plan are as follows:

- 1. Verify the presence or absence of dioxins and/or furans.
- 2. Develop a usable HRS score.

B. Sampling Plan

For an effective HRS score, the sampling strategy should be designed to show releases to the environment. There are six principles which should be considered when planning site investigation sampling activities. They are:

- 1. Target samples to determine maximum population exposed or proximity to a sensitive environment.
- 2. Collect sufficient background samples to preclude contributions from other sources.
 - 3. Minimize on-site sampling.
 - 4. Set priorities for on-site samples.
 - 5. Demonstrate that a release has occurred.
 - 6. Sample for air releases.

KDHE has collected air samples in the past and these will not be repeated in this sampling exercise.

The following table provides information on specific compounds of interest. The analytical requests will be based on the physical properties listed in the table.

			SAMPLE M	IATRIX	
COMPOUND	SOLUBILITY IN WATER	SPECIFIC GRAVITY	SOIL/SEDIMENT	SURFACE WATER	DEEP WATER
carbon tetrachloride	no	1.5	X		
chlorine	yes			X	
_ chloroform	slightly	1.485	X		X
dioxins	no		X		
ethylene dichloride	slightly	1.2554	χ		X
furans	no		X		
hexachlorobenzene	no	2.04	X		
hexane	no	0.659		X	
hydrogen chloride	yes	1.268			X
methylene chloride	slightly	1.335	X		X
PCBs	no	1.4-1.5	X		
pentachlorophenol	slightly	1.978	X		X
phenol	yes	1.07			X
petrachloroethylene	no	1.625	X		
1,1,1-trichloroethane	_	1.325	X		
trichloroethylene	slightly	1.456-1.462	X		X

The following will describe the types of samples, areas of interest and analysis requested:

1. Soil

a. Pasture area just north of the northwest quarter of the plant - 1000' x 1000' area on 330' grid - 16 samples collected at a depth of 0-6". This area is downwind of the hex incinerator.

b. Perimeter of plant - 2500' x 2500' divided into 500' lengths with 10 equally-spaced aliquots per length. The area of interest will be 50' from the outside of the perimeter of the plant - 20 samples will be collected from a depth of 0-6".

All soil samples will be analyzed for the following:

carbon tetrachloride chloroform dioxins 1,1-ethylene dichloride furans hexachlorobenzene methylene chloride PCBs pentachlorophenol tetrachloroethylene 1,1,1-trichloroethane trichloroethylene

2. Sediment

Three sediment samples will be collected from the following areas at depths of 0-3" at locations shown on the attached map:

- a. Storm water ditch along the north edge of the plant.
- b. Storm water ditch along the Missouri Pacific Railroad tracks.
- c. Storm water ditch along the south edge of the plant.
- d. Storm water ditch along the east side of the old lagoon in the southeast corner of the site.
- e. Beside the storm water ditch along the road south of the plant leading to the tributary to Cowskin Creek.
 - f. Along the tributary to Cowskin Creek.
 - g. Along Cowskin Creek downstream of the tributary.

In addition, one sample will be collected from Cowskin Creek upstream from the tributary but downstream of the diversion canal.

All sediment samples will be analyzed for the following:

carbon tetrachloride chloroform dioxins 1,1-ethylene dichloride furans hexachlorobenzene methylene chloride PCBs pentachlorophenol tetrachloroethylene 1,1,1-trichloroethane trichloroethylene

Surface Water

One water sample will be collected from the surface at each of the locations described in Section 2, a-g. These samples will be analyzed for hexane.

4. Water

One water sample will be collected from near the bottom at each of the locations described in Section 2, a-g. These samples will be analyzed for the following:

chloroform
1,1-ethylene dichloride
HC1
methylene chloride
pentachlorophenol
phenol
trichloroethylene

This sampling exercise is planned to be carried out during mid-July 1986, in conjunction with a RCRA inspection.

SAMPLE SUMMARY

Matrix	∦ of Samples	Estimated Concentration	Analysis Required
Soil	36	1 ow	carbon tetrachloride, chloroform, dioxins, ethylene dichloride, furans, hexachlorobenzene, methylene chloride PCBs, pentachlorophenol tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene
Sediment	22	1 ow	same as soil
Water (surfac	e) 8	low	hexane
Water (bottom) 8	1 ow	chloroform, ethylene dichloride, HCI, methylene chloride, pentachlorophenol, phenol, trichloroethylene
Duplicated soil	3	1 ow	same as soil
Duplicated water (surf	l ace)	low	hexane
Blank	•		
Total Samples	83		

SAMPLE ANALYSES REQUEST

		ORGANIZATION	•
ANALYSES REQUIRED	MATRIX	CONCENTRATION (LOW/MEDIUM/HIGH)	NO. OF SAMPLES
CLATILE QUENCES	Soul Stomen	Forn	61
la Amic Occasios	Warbe	لدين	9
BN A	SCAL / SLOWINT	L ċ.3	61
BNA	WATER	Lew	9
- Púsnaiol s	Soul Scamot	LOW	61
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lexane	Wated	L :13	9
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#### REGION 7 25 FUNSTON ROAD KANSAS CITY, KANSAS 66115

DATE:

June 27, 1986

#### **MEMORANDUM**

SUBJECT:

Vulcan Chemical Co., Wichita, Kansas

FROM:

Charles P. Hensley

Chief, EP&R/ENSV

T0:

Robert L. Morby Chief, SPFD/WSTM

Attached for your review is:

- __ Data Transmittal
- X Work Plan (revised)
- _ Trip Report
- Preliminary Assessment
- HRS Form with Supporting Documentation
- _ Final Report of Site Investigation

If you have any questions or comments, please contact Paul Doherty at 236-3888.

#### Attachments

cc: X E&E

X LABO

EP&R

TOPE

X RCRA

SPFD

EMCM

John C. Wicklund Director, ENSV



JUL 0 1 1986

E&EK.C.K.



**REGION 7** 25 FUNSTON ROAD KANSAS CITY, KANSAS 66115

June 26, 1986

#### MEMORANDUM

SUBJECT: Work Plan for Vulcan Chemical Company

FROM:

Gary E. Kepko Cyll SINV/EP&R/ENSV

TO:

Paul Doherty

Chief, SINV/EP&R/ENSV

Based on comments from RCRA, Superfund and the Lab Branches, I am modifying some sections of the work plan.

The major change concerns the dioxin and furan scan. Comments from the Lab Branch indicate each sample analysis would cost \$1,800, for a total cost of about \$110,000. I forwarded the lab's concern to the Superfund Branch with a request for substituting 2,3,7,8-TCDD for the dioxin and furan scans. I indicated I would collect two or three splits to hold for scans if any of the 2,3,7,8-TCDD analysis proved positive.

Attachment

### WORK PLAN VULCAN MATERIALS COMPANY, WICHITA, KANSAS

#### I. INTRODUCTION

#### A. Location

The Vulcan Materials Company is located approximately 10 miles from central Wichita, Kansas, with a legal location of SW/4, Sec 27, T 28S, R lW, Bayneville Quandrangle. The plant is situated in a rural setting about 1.3 miles from Cowskin Creek.

#### B. Facility Description

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Process wastes are basically of two types, process wastes and process sludges. The process waters are collected and disposeded of by deep well injection. Some sludges are incinerated in the hexane incinerator. At one time, a portion of process waste was sent to Chemical Waste Management in Emelle. Alabama.

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- 3. Surface Impoundments Alpha cake (alpha-isomer HCB) and hex (Hexachlorinated) wastes were stored on site with a clay cover capping them. Plant sanitary wastewater and runoff from nonprocess areas are held in two holding lagoons with zero discharge.

The compounds used during manufacture are as follows: carbon tetrachloride, chlorine, chloroform, ethylene dichloride, hydrogen chloride (anhydrous), hydrogen chloride (aqueous), methylene chloride, phenol, tetrachloroethylene, 1,1,1-trichloroethane and trichloroethylene. Some of the wastes generated include levels of PCBs at approximately 300 parts per million (ppm).

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COMPOUND	IN WATER	GRAVITY	SOIL/SEDIMENT	WATER	WATER
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chlorine	yes			X	
chloroform	slightly	1.485	X		X
dioxins	no		X		
ethylene dichloride	slightly	1.2554	χ		X
furans	no		X		
hexachlorobenzene	no	2.04	X		
hexane	no	0.659		X	
hydrogen chloride	yes	1.268			X
methylene chloride	slightly	1.335	X		X
PCBs	no	1.4-1.5	X		
pentachlorophenol	slightly	1.978	X		X
phenol	yes	1.07			X
petrachloroethylene	no	1.625	χ -		
1,1,1-trichloroethane	no	1.325	X		
trichloroethylene	slightly	1.456-1.462	X		X

The following will describe the types of samples, areas of interest and analysis requested:

#### 1. Soil

- a. Pasture area just north of the northwest quarter of the plant 1000' x 1000' area on 330' grid 16 samples collected at a depth of 0-6". This area is downwind of the hex incinerator.
- b. Perimeter of plant 2500' x 2500' divided into 500' lengths with 10 equally-spaced aliquots per length. The area of interest will be 50' from the outside of the perimeter of the plant 20 samples will be collected from a depth of 0-6".

All soil samples will be analyzed for the following:

carbon tetrachloride
chloroform
2,3,7,8-tetrachlorodibenzo-p-dioxin
1,1-ethylene dichloride
hexachlorobenzene
methylene chloride
PCBs
pentachlorophenol
tetrachloroethylene
1,1,1-trichloroethane
trichloroethylene

#### 2. Sediment

Three sediment samples will be collected from the following areas at depths of 0-3" at locations shown on the attached map:

- a. Storm water ditch along the north edge of the plant.
- b. Storm water ditch along the Missouri Pacific Railroad tracks.
- c. Storm water ditch along the south edge of the plant.
- $\mbox{\ensuremath{\mbox{d.}}}$  Storm water ditch along the east side of the old lagoon in the southeast corner of the site.
- e. Beside the storm water ditch along the road south of the plant leading to the tributary to Cowskin Creek.
  - f. Along the tributary to Cowskin Creek.
  - q. Along Cowskin Creek downstream of the tributary.

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1,1-ethylene dichloride
hexachlorobenzene
methylene chloride
PCBs
pentachlorophenol
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1,1,1-trichloroethane
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#### 3. Surface Water

One water sample will be collected from the surface at each of the locations described in Section 2, a-g. These samples will be analyzed for hexane.

#### 4. Water

One water sample will be collected from near the bottom at each of the locations described in Section 2, a-g. These samples will be analyzed for the following:

chloroform
1,1-ethylene dichloride
HCl
methylene chloride
pentachlorophenol
phenol
trichloroethylene

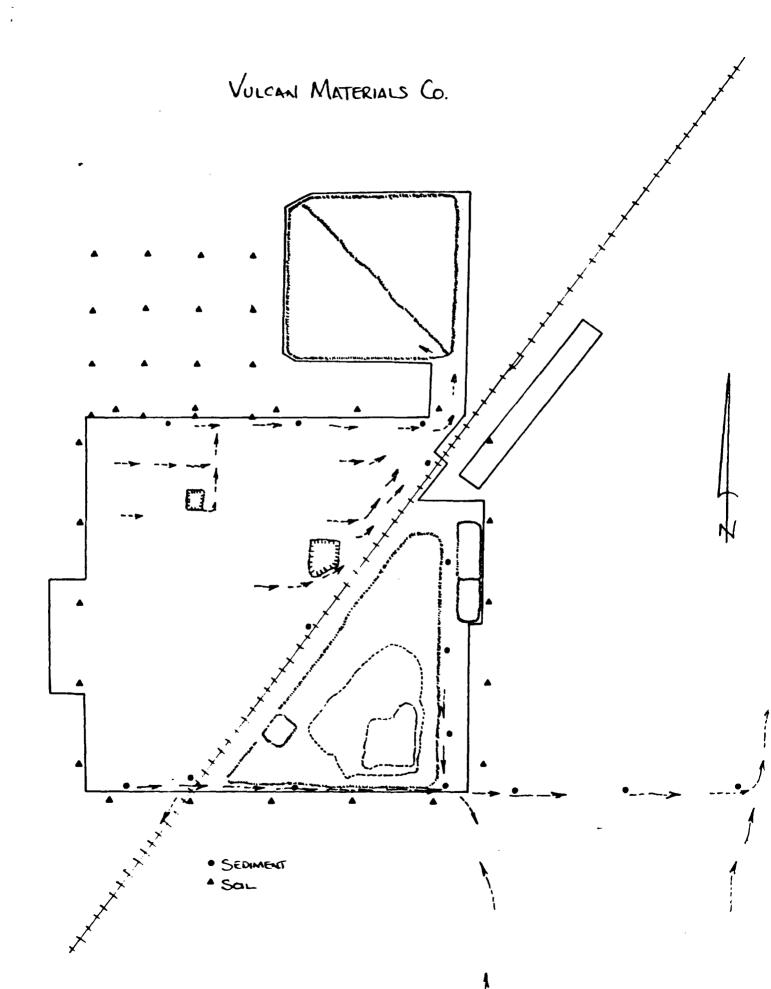
This sampling exercise is planned to be carried out during mid-July, 1986, in conjunction with a RCRA inspection. In addition, two or three soil samples will be composited and held for dioxin/furan scan if samples analyzed for 2,3,7,8-TCDD are positive.

### SAMPLE SUMMARY

Matrix	# of Samples	Estimated Concentration	Analysis Required
Soil	36	1 ow	carbon tetrachloride, chloroform, dioxins, ethylene dichloride, hexachlorobenzene, methylene chloride, PCBs, pentachlorophenol tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, 2,3,7,8-TCDD
Sediment	22	1 ow	same as soil
Water (surfac	ce) 8	low	hexane
Water (botton	n) 8	l ow	chloroform, ethylene dichloride, HCI, methylene chloride, pentachlorophenol, phenol, trichloroethylene
Duplicated soil	3	l ow	same as soil
Duplicated water (sur	l face)	low	hexane
Blank	4	low	
Total Sample	s 83		

# SAMPLE ANALYSES REQUEST

'Analyses Required	MATRIX	CONCENTRATION (LOW/MEDIUM/HIGH)	NO. OF SAMPLE
OLATILE OZEANKS	Sou / Stoment	Low	61
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BN A	SCIL / SLDIMINT	Fç."?	Ć١
BNA	WATEL	LEW	9
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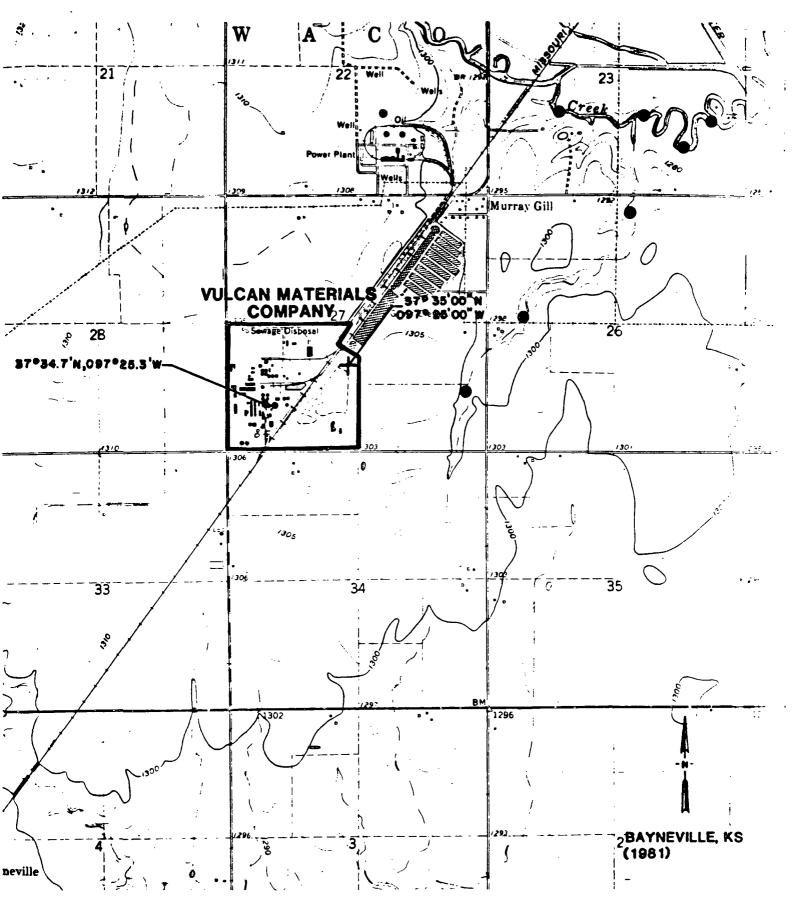


Figure 2. Site location, Sedgwick County, Kansas. Scale 1:24,000.

SEDIMENT

4

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DESCRIPTION OF SH	HIPMENT				М	ODE OF SHI	PMI	ENT				
PIECE(S) CO	ONSISTING O	F	BOX(ES)		_	СОММЕ		AL C	ARF	RIER	R:	
ICE CHEST(	S); OTHER _				-	COURIE SAMPLE		ZIAO	/FVF	. D		
						SAMPLE	HU	UNV	EYE	ט		(SHIPPING DOCUMENT NUMBER)
PERSONNEL CUSTO	_		E TIM	E	RECE	IVED BY	-			-		REASON FOR CHANGE OF CUSTODY
Brine All	John	7/16			Wh	n D	he	e	l	L		
SEALED RELINQUISHED BY	UNSEALE					IVED BY		UN	SEA	ALE	DA	PREPARE FOR Shipping
	Sulo	DAT	100			na Mari	1	X	de	ns	lon	REASON FOR CHANGE OF COSTODY
Willem (	UNSEAL	ED/ 18/	86 he	, .	SEA	ALED	1				DX	TRANSPORT TO EPA Lab
RELINQUISHED BY	7/1	DAT	E TIM		RECE	IVED BY	6	_				
Kenna Marie	Dellis	27//	8/86 10)	4m	100	Juoo	-0		NSF	ΔΙΙ	EDF	analysis

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ACTIVITY LEADER (F KEPKO, GAR	Print)	i i	NAM	E OF SUI	RVEY O	OR ACTIVITY	7					DATE OF COLLECTION SHEET  DAY MONTH YEAR OF 7
CONTENTS OF SHIP												DAT WONTH TEAR
SAMPLE NUMBER	CUBITAINER NUME	BOTTLE	BOTTLE	BOT		VOA SET (2 VIALS EA)	water	SAMP	nent	MEDI	A other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
BMJM6033		5				Ì		×				2. 800 DEWILLED TO VULL
-037	6.	5				1		×				
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-043	87	5				)1		K				a
-044		5				1		x				(*
-046			2	de		4	×					SAITS DELICATED TO VILLAN
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DESCRIPTION OF SI	HIPMENT	1			MO	ODE OF SHI	PMI	ENT				
PIECE(S) C	ONSISTING OF	F	BOX(ES)		$T_{-}$	СОММЕ	RCI	AL C	ARR	IER:		
ICE CHEST					1-	COURIE						
						XSAMPLE	ER C	ONV	EYE	D		(SHIPPING DOCUMENT NUMBER)
PERSONNEL CUSTO		The same of the sa	TE TIN	ИE Т	RECEI	VED BY	//		1		-	REASON FOR CHANGE OF CUSTODY
SEALED	UNSEALE	- 7/10	186 120	17200 ho 1// 1/20 8								PRICILE FOR SHIPPING
Milliam (Hull 18/ 182) Long Main Loverson REASON FOR CHANGE OF CUSTODY										REASON FOR CHANGE OF CUSTODY		
SEALED RELINQUISHED BY	UNSEAL	ED DAT	106	lus	SEA	VED BY		UN	SEA	LEI	ÞΫ́	TRUNSPORT to Lals REASON FOR CHANGE OF CUSTODY
KennaMari	KOLES	on 7/	1	DAM	SEA	hoo	ok	2	ISF/	ALE	_D —	analysio

ACTIVITY LEADER(P	rint)		100	NAME OF S	URV	EY O	R ACTIVITY	/				T	DATE OF COLLECTION SHEET
KEPKO, GARLY			100				INU CO.					- [-	DAY MONTH YEAR   Of
CONTENTS OF SHIP													DAT MONTH TEAN
CAMPLE			YPE OF C	ONTAINERS					SAMF		MED	_	RECEIVING LABORATORY
SAMPLE NUMBER	CUBITAINER	BOTTLE BERS OF CO	BOT	TLE E	BOTTLE E NUM		VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
BMJM6030		5					1		K				2. Sus DELIVERED TO VUES
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DESCRIPTION OF SH	HIPMENT					M	DE OF SHI	PM	ENT				
PIECE(S) CO	ONSISTING O	F	ВОХ	(ES)		_	COMME		AL C	ARF	RIER		
ICE CHEST(	S); OTHER _				.	_	COURIE		OAIN	/CVC	.D		
PERSONNEL CUSTO	DV DECORD						SAMPLE	in U	UNV	CTE	U		(SHIPPING DOCUMENT NUMBER)
RELINQUISHED BY		THE RESERVE OF THE PERSON NAMED IN	TE	TIME	RE	CEI	VED BY	0		1		_	REASON FOR CHANGE OF CUSTODY
Am All the Books Um. Her								Xe	_	- A	PACKAGE FOR SKIPPING		
RELINQUISHED BY	UNSEALE		TE	TIME	RE	CEI	VED BY	_		1	11	DQ.	REASON FOR CHANGE OF CUSTODY
William	Oherl	e /	18/86	0830	X	On	na Ma	M	2/6	Ol	ev	Son	Transport TO EPA Lab
SEALED RELINQUISHED BY	UNSEAD	ED X	ŢE	TIME	RE	SEA	VED BY		UN	ISE	ALE	ΡP	REASON FOR CHANGE OF CUSTODY
Koma MI	110Agl		18/86	10 AM			him		1	4			analysis
The state of the contraction of	UNSEAL	ED	. 0		b	SEAL	ED	50	UN	NSE	ALE		,

Jim

ACTIVITY LEADER(Print) KERKO, GARYE	[	DATE OF COLLECTION SHEET							
CONTENTS OF SHIPMENT		V0CC	476-21765 Co.						DAY MONTH YEAR
	TYPE OF C	ONTAINERS		S	SAMP	LED	MED	OIA	RECEIVING LABORATORY
	TILE BOT		, , , , , , , , , , , , , , , , , , , ,	water	soil	sediment	dust	other	REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
BMJM6029	5				×				2.80 DELIGIEDTO VICA
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DESCRIPTION OF SHIPMENT			MODE OF SH	PMI	ENT	_			
	POV	(FC)	COMME				DIED	· ·	
PIECE(S) CONSISTING OF		(E3)	COURIE		AL U	MIN	IILI	1	
ICE CHEST(S); OTHER			X—SAMPL	ER C	ONV	/EYE	ED		(SHIPPING DOCUMENT NUMBER)
PERSONNEL CUSTODY RECORD									
RELINQUISHED BY (SAMPLER)  DATE  TIME  RECEIVED BY  12006  SEALED  UNSEALED								1	PACKAGE FOR SHIPPING
RELINQUISHED BY	DATE		RECEIVED BY	ie		0	1.	rson	REASON FOR CHANGE OF CUSTODY
SEALED UNSEALED	1986	TIME	SEALED RECEIVED BY	UNSEALED					
RELINQUISHED BY	DATE						TREASON FOR CHANGE OF CUSTODY		

ACTIVITY LEADER(P	ACTIVITY LEADER(Print) NAME OF SURVEY OR ACTIVITY										$\neg$	DATE OF COLLECTION SHEET	
KEPW, GALY	E,			VVICS	J MATT	ERIA	KS G.						DAY MONTH YEAR OF
CONTENTS OF SHIP			. "						-1,775				
SAMPLE		8 cm	TYPE OF	CONTAINE	RS			5	AMP		MED	-	RECEIVING LABORATORY
SAMPLE NUMBER	CUBITAINER	BOTT		TTLE	BOTTL		VOA SET (2 VIALS EA)	water	-	sediment	st	othe	REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMB	ERS OF	CONTAINER	RS PER SA	MPLE NUI	MBER		Wa	Soil	Sec	dust	_	other sample numbers, etc.)
BMJM6004		5					1		K				2-800 JARS TO VUKEN
- 006		5					1		×				
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-015		5					l		×				دز
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DESCRIPTION OF SE	HIPMENT					M	ODE OF SHI	PM	ENT		_	-	
DIECE(S) C	ONSISTING OF		P.O	V(ES)		$\vdash$	COMME	BCI	ΔΙΩ	ARI	RIFF	3.	
				IX(E3)		-	COURIE		AL C	<i>7</i> /1111	1111		
ICE CHEST	(S); OTHER _					_	XSAMPLE	Ŗ C	ON	VEYE	ED		(SHIPPING DOCUMENT NUMBER)
PERSONNEL CUSTO	DY RECORD												
RELINQUISHED BY	(SAMPLER)		DATE	TIME			IVED BY		1	8	1	1	REASON FOR CHANGE OF CUSTODY
Brune A. M	Janus		7/25/86	1200	cho.	M	Velleon	1	0	U	u	lQ.	PACKAGE FOR SHARLET
SEALED	UNSEALE			TIME		_	ALED IVED BY		UN	ISE	ALE	D	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY	2		DATE 7/		1	Varia Maria tolore							4497 -
Um Obert	UNSEAL		18/86	0830			JA MURSPERI POETI CUI						
SEALED RELINQUISHED BY	_	RECEIVED BY REASON FOR CHANGE OF CUSTODY											
Leans Marin	Wenn		1/18/86	10 A	M	1	)	ools analysis					
TISEN ED	UNSEAL	ED	180			SE	ALEDVOC	70	UI	NSE	AL	ED	- analysis

ACTIVITY LEADER(F	NAME OF	AME OF SURVEY OR ACTIVITY								DATE OF	COLLECT	TON,		SHEET				
KEPKO, GARY		VULCAN CHEMIUM CO.								DAY	MONTH	YEAR	1	of	1			
CONTENTS OF SHIPMENT																		
SAMPLE TYPE OF CONTAINERS							A OFT	SAMPLED MEDIA					-		VING LABORAT			
NUMBER						VOA SET (2 VIALS EA)			-	sediment	st	Utile		REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)		i.		
	NUMI	BERS OF CO	NTAINERS	S PER SAME	PLE NUM	IBER		water	soil	Se	qn	_	-	Other se	ample numbers	. 616.)		43
BMJM6003		5					1		X				2-800	JAUS .	To Wice	AJ		31
-007		5					1		X									
-012	7	5					1		×	1								
-016	,	5					,		×			*						
-021		5					1		×									3
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DESCRIPTION OF SI	HIPMENT					MODE OF SHIPMENT												
PIECE(S) C	PIECE(S) CONSISTING OF BOX(ES)							RCI	AL C	ARF	RIER	:						
ICE CHEST(S); OTHER						COURIER												
SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)																		
PERSONNEL CUSTODY RECORD																		
RELINQUISHED BY (SAMPLER) DATE TIME						RECEIVED BY REASON FOR CHANGE OF CUSTODY								1				
SEALED UNSEALED DE 1200 h.						Jehlleam Shelle PACCAGE For SHIPMENT												
RELINQUISHED BY	ONSEAL		TE	TIME	RE	CEIVE	D BY			1	/		REASO		CHANGE			Y
Wm. M. Oberle 15/4, 0830						Jealed Unsealed & Transport To Lab RECEIVED BY REASON FOR CHANGE OF CUSTODY												
SEALED	SEALED UNSEALED 180 MA RELINQUISHED BY DATE TIME						D_BY		UN	ISE	ALE	D	REASO	N FOR	CHANGE	OFCL	ISTO	ΟY
1/ 1/1	Noly	17)	,			LUZIVE		.0	0	4			1					1
DSEALED MAIN	ED	8/86	10 A1	h	SEALE	pu	01		NSE.	ALE	ED	-	ens	lypis			100	

ACTIVITY LEADER (Print)  NAME OF SURVEY OR ACTIVITY  WOLCAN CHEMICAL CO.										DATE OF COLLECTION SHEET			
KEPKO, GARL	( E.	VULCA	VOLCAN CHEMICAL CO.							DAY MONTH YEAR / Of			
CONTENTS OF SHIPMENT													
SAMPLE		8-02	OF CONTAINERS	CONTAINERS VOA SET					D MEDIA othe		RECEIVING LABORATORY REMARKS/OTHER INFORMATION		
NUMBER		BOTTLE	BOTTLE AINERS PER SAM	BOTTLE DI E NI IMPE	(2 VIALS EA)	water	soil	sediment	lust		(condition of samples upon receipt, other sample numbers, etc.)		
BMJM6002	NOME	5	WINERS PER SAMI	PLE NOMBE	1	>	S X	so	О		2-803 VAUS DEINERED TO VILL		
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DESCRIPTION OF SH	HIPMENT			1	MODE OF SHI	PME	NT						
PIECE(S) CO	ONSISTING O	F	BOX(ES)		СОММЕ	RCIA	AL C	ARF	RIEF	R:			
ICE CHEST(	_   ·	COURIER  SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)											
PERSONNEL CUSTODY RECORD SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)													
DELINGUISHED BY (SAMBLED) DATE TIME RECEIVED BY									REASON FOR CHANGE OF CUSTODY				
Muhal Muhalowki 7/15/86 1200C					William Oberlo PACKAGE FOR SITIEMENT								
SEALED RELINQUISHED BY	SEALED UNSEALED REASON FOR CHANGE OF CUSTODY												
	1/2.	Var a Marie Lake and											
William Mi	T SE	SEALED UNSEALED											
RELINQUISHED BY	UNSEAL	DATE	/	- 1	EIVED BY		0				REASON FOR CHANGE OF CUSTODY		
Fenna War	UNSEAL	80 10 17		ALED	90	U	NSE	AL	ED	analysis			

ACTIVITY LEADER(P	Print)		NAME	OF SUR	YEY OR ACTIVIT	Υ -	2018	- Tourist	1.14	DATE OF COLLECTION SHEET						
Kepko, Go	ery.t		Va	Ican	Material	5. (	0			DAY MONTH YEAR Of						
CONTENTS OF SHIP	MENT ⁾															
SAMPLE		TYF	IERS		SA	AMPL		MEDIA	RECEIVING LABORATORY							
NUMBER	CUBITAINER	BOTTLE	BOULE	BOTTL	(11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	water	_	sediment	dust	her REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)						
0	NUME	BERS OF CON	TAINERS BER S	SAMPLE NU		×	Soil	Se	용							
BMJM6047		4	2		14					2 Voa sets and 1800, jug to Vuko						
BMJM6048			2		4					11 11000						
BMTM6049			}		2	П			g a							
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2 12, 6, 60						$\vdash$	+	+	-	16						
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DESCRIPTION OF SI	HIPMENT				MODE OF SHIPMENT											
PIECE(S) C	PIECE(S) CONSISTING OF BOX(ES)						COMMERCIAL CARRIER:									
		COURIER														
ICE CHEST	SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)															
PERSONNEL CUSTO	DY RECORD															
RELINQUISHED BY	R	RECEIVED BY REASON FOR CHANGE OF CUSTODY														
John R. Du	00 /	Kenna Marie Kolesson Package for Shipping														
RELINQUISHED BY	E R	RECEIVED BY REASON FOR CHANGE OF CUSTODY														
Long Mari	2M	Doods - analysis														
ISEALED	UNSEAL	BUC 1/2			SEALED	0.00	ŮΝ	SEA	LED	REASON FOR CHANGE OF CUSTODY						
RELINQUISHED BY		DAT	E TIME	1	ECEIVED BY					REASON FOR CHANGE OF COSTODY						
DSEALED	UNSEAL	ED		-	SEALED		UN	SEA	ALED	Н						